REMARKS

BRIEF SUMMARY OF INTERVIEW

Initially, Applicants expressed appreciation to the Examiner for the telephone interview where Applicants addressed the Examiner's prior art rejections asserted in the Advisory Action mailed October 19, 2004. During the interview, Applicants noted that the Advisory Action appeared to suggest that amending the claims to recite "unfused protein" would overcome the Examiner's prior art rejections. The Examiner agreed, and indicated that amending the claims to recite "unfused protein" may overcome the prior art rejection, subject to additional searching in the art. The Examiner suggested that Applicants amend the claims, provide arguments to overcome the prior art, and point to places in the specification that support such an amendment. Accordingly, the Examiner suggested Applicants file an Amendment with a Request for Continued Examination.

Applicants also expressed appreciation to the Examiner for entering the amendment filed September 29, 2004, with cancellation of non-elected claims 9-14, and withdrawing the rejections under 35 U.S.C. § 112, second paragraph to claims 1-8, 21 and 25, in the Advisory Action.

Reconsideration and withdrawal of the rejections of record is respectfully requested.

SUMMARY OF STATUS OF AMENDMENTS

In the present amendment, claims 1-6 and 15-28 will be amended, with claims 1, 2, 21, and 25 being independent claims. Claims 1-8 and 15-28 will remain pending and under

consideration. Furthermore, the claims have been amended to include the term "unfused protein" in accordance with the Examiner's suggestion in the Advisory Action and telephone interview.

Applicants note that support for the amendment may be found throughout the specification, including the Examples at pages 22-24 in which the genes integrated in the vector encode organelle membrane-bound protein that is not fused to any other protein. Furthermore, because the organelle membrane-bound protein is recovered in the viral envelope, the organelle membrane-bound protein is not fused to the coat protein of the virus or the cell membrane of the host cell.

Reconsideration and allowance of the application are respectfully requested.

RESPONSE TO REJECTIONS BASED UPON PRIOR ART

Claims 1-8 and 15-28 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Grabherr et al. (Biotechniques, 1997; 22(4): 730-735) (hereinafter, "Grabherr"), Possee (Current Opinion in Biotechnology, 1997; 8: 569-572) (hereinafter, "Possee"), and in further view of Nohturfft et al. (PNAS 1999; 96: 11235-11240) (hereinafter, "Nohturfft") and Duncan et al. (Journal of Biological Chemistry 1997; 272(19): 12778-12785) (hereinafter, "Duncan").

The Advisory Action asserts that Duncan teaches SREBP-2 expression in the ER, and that Nohrturfft teaches SREBP-2 expression in the Golgi Apparatus. Although the rejection acknowledges that neither Duncan or Nohturfft teach or suggest expression in a baculovirus system, one of ordinary skill in the art would have been motivated, after reading Grabherr and Possee, to express SREBP-2 in a baculovirus system, or study the protein because baculovirus

expression produces mammalian proteins in native conformation on the surface of the virus. In particular, the rejection asserts that Grabherr (page 732, second paragraph) teaches a budded baculovirus expressing a recombinant protein on the surface of the virus from cell culture.

In response, Applicants note that: (1) the Duncan and Nohturfft documents merely discuss the known characteristics of SREBP-2; (2) Grabherr teaches the expression of protein on the baculovirus coat where that protein has been fused to the major coat protein of a baculovirus; and (3) Possee merely reviews Grabherr. Therefore, at most the combination of these documents teaches the expression of an intracellular organelle membrane-bound protein on the coat of a baculovirus if the protein has been fused to the major coat protein of a baculovirus. However, the combined documents do not teach or suggest the claimed method of recovering a budded baculovirus expressing an intracellular organelle unfused membrane-bound protein.

As discussed in Applicants' Amendment filed September 29, 2004, Duncan and Nohturfft merely discuss the characteristics of SREBP-2. Duncan is directed to sterol-regulated protease which cleaves the amino terminal segments of sterol regulatory element-binding proteins (SREBPs) from cell membranes to allow the SREBPs to enter the nucleus and stimulate transciption of genes involved in the uptake and synthesis of cholesterol and fatty acids. Similarly, Nohturfft is directed to the proteolytic cleavage of SREBPs by SREBP cleavage-activating protein (SCAP) which faciliates cleavage of SREBPs by Site-1 protease. In addition, Nohturfft teaches that SREBPs are present in the ER, and that a protein is expressed fused to the virus. However, Nohturfft does not teach or suggest that an ER protein may be expressed in a

virus. Neither Duncan nor Nohturfft teach or suggest a method of recovering a budded baculovirus expressing an intracellular organelle unfused membrane-bound protein.

Applicants note that Grabherr is directed to expression of a protein on the baculovirus coat where that protein has been fused to the major coat protein of the baculovirus, Gp64. Grabherr merely teaches the expression of a protein on the baculovirus where the protein has been fused to the major coat protein of the baculovirus, and that the paragraph pointed out by the Examiner at page 732, second paragraph, merely discusses detection of that protein expression using enzyme-linked immunosorbent assay (ELISA). As discussed in Loisel TP et al., Nature Biotech. 15(12): 1300-1304, 1997, cited at page 1, third paragraph of Applicants' specification, baculovirus are made in the nucleus and undergo a budding process through the plasma membrane, so that it would not have been obvious to one of skill in the art that an organelle membrane-bound protein such as an ER membrane-bound protein, is expressed at a high concentration in a budded baculovirus. Possee is a general review of baculovirus expression vector technology, with an emphasis on the baculovirus vectors in Grabherr. Neither Grabherr nor Possee teach or suggest a method of recovering a budded baculovirus expressing an intracellular organelle unfused membrane-bound protein.

Furthermore, Applicants note that the protein fused to the major coat protein of a baculovirus taught in Grabherr does not possess the same function as that of the non-fused protein. In contrast, the protein obtained by the claimed invention is not fused to another protein so that the protein possesses proper structural protein conformation and function versus the fused protein of Grabherr. In addition, SREBP is a membrane-bound enzyme-substrate protein and

SCAP is a membrane-bound enzyme activator that do not exist in the cell membrane so that it would not have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed method of recovering a budded baculovirus expressing an intracellular organelle unfused membrane-bound protein.

Therefore, the combination of Grabherr or Possee with Duncan and Nohturfft at most teach the expression of an intracellular organelle membrane-bound protein on the coat of a baculovirus provided the protein has been fused to the major coat protein of a baculovirus. It would not have been obvious to one of skill in the art at the time the invention was made to combine the teachings in these documents to obtain a method of recovering a budded baculovirus expressing an intracellular organelle unfused membrane-bound protein.

As noted above, the present invention is not taught or suggested by any of the prior art cited in the Office Action. For this reason, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 1-8 and 15-28 under 35 U.S.C. §103(a).

CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejection of record, and allow all the pending claims.

Allowance of the application is requested, with an early mailing of the Notices of Allowance and Allowability.

If the Examiner has any questions or wish to further discuss this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,
Takao HAMAKUBO et al.

Bruce H. Bernstein
Reg. No. 29,027

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191